

Remarks

The Present Invention and the Pending Claims

This invention relates generally to computer networking, and more particularly to a new method and apparatus for transmitting information (input) signals from a mobile device to a users primary PC such as a desktop PC for processing and then transmitting the processed information (output) signals from the primary PC back to the mobile device, thus enabling the user to operate the primary PC remotely from the mobile device.

Claims 26-48 are currently pending. Reconsideration and allowance of claims 26-48 is respectfully requested.

Summary of the Office Action

Claim rejections – 35 USC 112:

Claims 8-18 recites the limitation “the Apparatus” in line of each of claims 8-18. There is insufficient antecedent basis for this limitation in the claim.

Specification:

The abstract of the disclosure is objected to because other text is included. It must be presented on a separate sheet, apart from any other text. Correction is required. See MPEP 608.01(b).

Claim objections:

Claims 11-12 and 13 are objected to because of the following informalities: the claims recite cell phone/PDA. It is not clear if the “/” stands for “or” or “and” or “both”. For examination purposes examiner assumes the “/” as an “or”, hence cell phone or PDA is assumed. Appropriate clarification is required.

Claims 1-2, 4-10, 14 and 19-25 are rejected under 35 USC 102(b) as being anticipated by Boals et al. Patent Number (6108727), herein “Boals”.

Claims 3 and 11-13 are rejected under 35 USC 103(a) as being unpatentable over Boals US Patent Number (6108727) in view of Dowling et al. US Patent Number 20030050019 (hereinafter “Dowling”).

Amendments To The Claims

Claims 1-25 are cancelled.

New claims 26-48 are entered.

The office action states: **“Claims 8-18 recites the limitation “the Apparatus” in line of each of claims 8-18. There is insufficient antecedent basis for this limitation in the claim.”**

Claims 8-18 have been cancelled. Hence the above rejection is moot.

The office action states: **“The abstract of the disclosure is objected to because other text is included. It must be presented on a separate sheet, apart from any other text. Correction is required. See MPEP 608.01(b).”**

In response to the above objection, a corrected abstract is submitted on page 2 of this response.

The office action states: **“Claims 11-12 and 13 are objected to because of the following informalities: the claims recite cell phone/PDA. It is not clear if the “/” stands for “or” or “and” or “both”. For examination purposes examiner assumes the “/” as an “or”, hence cell phone or PDA is assumed. Appropriate clarification is required.”**

Claims 11-12 and 13 have been cancelled. Hence the above rejection is moot.

The office action states: **“Claims 1-2, 4-10, 14 and 19-25 are rejected under 35 USC 102(b) as being anticipated by Boals et al. Patent Number (6108727), herein “Boals”.”**

MPEP section 2131 provides, in pertinent part: “To anticipate a claim, the reference must teach every element of the claim. ...A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference..... The identical invention must be shown in as complete detail as is contained in the ...claim”.

Claims 1-25 have been cancelled. Although new claims have been entered, Examiner’s rejection based on reference Boals has been considered. Applicant anticipates the examiner to reject new claims 26-48 on the same basis as the rejection of claims 1-25. Remarks pointing out the novelty of the new claims over the cited reference are not submitted on a per rejection basis, but are directed to all the new claims 26-48.

Applicant’s invention discloses a system and method for remote I/O for a processing unit, wherein a mobile input/output terminal transmits input signals to the primary processing unit for both processing and storage of processed data. The primary processing unit then transmits the processed information as an output signal to the mobile input/output terminal for use by the user of the mobile input/output terminal for transient audio-visual display only. The mobile input/output terminal (referred to as “mobile peripheral hardware” or “Pseudo-mobile PC” 150 or terminal at paragraph [0023] in the specification) may be a lightweight handheld terminal and has very limited, specialized computing power (paragraph [0031] in specification) for managing the hardware in the terminal (for e.g. by running BIOS firmware code). The mobile input/output terminal functions as a “dumb” terminal of the primary processing unit and duplicates exactly what the user would have seen on the monitor of the primary processing unit (referred to as “primary PC” 154 in the specification), had the user been physically operating on the primary unit, i.e., the mobile I/O terminal only duplicates the user interface functions or

I/O functions of a “primary PC”, but does not duplicate operation of any software application or manipulation of data. The only other function of the mobile input/output terminal is to establish wireless two way communication link between itself and the “primary PC” (see paragraph 0031 of the specification). Boals, however, teaches away from the invention by providing a central processing unit (CPU 112), and DRAM memory chips and E²PROM permanent storage on the wireless interface device 100 (see Boals, col. 7, lines 16 to 27). Applicant respectfully submits that the wireless interface device 100 has enough computing capability to “receive” and “store” data in “electronically programmable storage” so as to machine read data and locally manipulate some applications and data (see Boals, Abstract). The remote host computer in Boals compresses the application “header” (only what is required to machine-read the data) and transmits the “header portion” of an executable file and the data into the wireless interface device, enabling the wireless interface device to machine-read the data. Reading the data requires an **operating system** (OS) running on the wireless interface device 100 for managing both the **application level software** and the device hardware. Application software (viewer manager software 200 in Boals) is required to read the data and display the same on the LCD of the wireless interface device 100 in Boals. The mobile input/output terminal in the present invention neither runs an OS for this purpose, nor does it include any kind of permanent storage, electronically programmable or otherwise. The mobile input/output terminal is only capable of rendering audio-visual signals sent from the primary processing unit as transient screen shots, without any capability to machine read the underlying data which continues to reside at the primary processing unit (paragraph 0037 in the specification). Thus, in contrast to the wireless interface device 100 running an OS for managing application software in Boals, the mobile input/output terminal of the present invention does not duplicate any of the resources (CPU, OS, permanent memory, etc.), or operations (applications, data files and services) of the primary processing unit, but virtually accesses and controls these resources remotely as if the user were physically there.

As mentioned above, Boals compresses the application “header” (only what is required to machine-read the data) and downloads the “header” in to the wireless interface device **100**, so that the wireless interface device **100** can machine-read the data. For example, to display a Microsoft Word page, MS Word program (.exe file) and the data file (.doc file) containing the page would be compressed and transmitted by the host computer, and “received” (downloaded), “stored” in the locally resident “electronically programmable” storage and displayed on the wireless interface device **100** of Boals. Therefore, at least temporarily while in use, the “read only” portion of MS Word application must run inside the wireless interface device **100** to display that page. See summary in Boals *“Briefly, the present invention relates to a system for compressing program files, such as .EXE and .COM files.”* Also see abstract of Boals: *“A system for compressing program files at a remote host computer and **transmitting the compressed program files** to one or more wireless interface devices using a wireless link. **The received compressed files are stored in an electronically programmable storage device on the wireless interface device.**”* Therefore, in contrast to wireless interface device of Boals storing and (temporarily) running at least parts of the WORD.EXE program (Microsoft application) to display the page, the mobile input/output terminal in the present invention does not download any portion of either the program or data files, but only receives a screen flash (audio visual signals) resembling a MS Word page, which is in fact generated and stored at the primary processing unit, and transmitted without any underlying data. The advantage of transferring only the I/O signals between the mobile input/output terminal and the primary processing unit in the present invention is that it provides for true (remote) control and access of the primary processing unit by the mobile input/output terminal, without having to duplicate any software application or data manipulation operation. Hence Boals does not teach, either expressly or inherently, the following limitation in applicant’s claim 26 and 48:

“a mobile input/output terminal for the primary processing unit, wherein said mobile input/output terminal enables a user to control the primary processing unit for all data processing and storage using said plurality of system resources;” of claim 26;

“wherein the mobile input/output terminal comprises a microprocessor **specifically designed and configured** to exclusively drive input and output peripherals of the mobile input/output terminal and one of wireless connectivity and landline connectivity” of claim 45;

“transmitting user generated raw input signals from a mobile input/output terminal to a primary processing unit over a communication network;” of claim 48;

“transmitting said audio-visual output signals from the primary processing unit to said mobile input/output terminal over said communication network;” of claim 48; and

“rendering audio-visual display at the mobile input/output terminal as screen flashes using said audio-visual output signals” of claim 48.

Furthermore, the present invention utilizes two way data communications such as PSTN, Wi-Fi, cellular networks or any other wireless carrier network using protocol and standards for wide range transmissions. The two way data communications between the mobile input/output terminal and the primary processing unit may also be established over any available communication network including wireless carrier network and Internet (See claims 27 and 28 and paragraph [0031] in specification). Boals, however, specifies exclusive use of radio operating within the 2.4000-2.4835 GHz band, which is the unlicensed Industrial Scientific and Medical (ISM) band. The configuration of the radio communication subsystem between the wireless interface device **100** and the remote host computer **101** (Boals, col. 6, lines 16 to 31) does not permit wide range transmissions such as those over cellular networks and Internet. Hence Boals does not teach, either expressly or inherently, the following limitation in claims 27 and 28:

“wherein the communication network is one of a wireless carrier network, a wireless local area network, a Wi-Fi connection, a Wi-Max connection and a publicly available “hotspot”., and

“wherein the communication network is one of a land line based broadband from an Internet service provider and a local area network providing Internet service via land line.”

For the reasons stated above, applicant respectfully submits that claims 26-48 are novel over Boals.

The office action states: **“Claims 3 and 11-13 are rejected under 35 USC 103(a) as being unpatentable over Boals US Patent Number (6108727) in view of Dowling et al. US Patent Number 20030050019 (hereinafter “Dowling”).”**

MPEP section 2142 states: “To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art references (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, not in applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).”

First, in response to the rejection of claims over Boals, in view of Dowling, it is submitted that there is no teaching, suggestion or motivation either in Boals or Dowling, or in the knowledge generally available to one of ordinary skill in the art, that a system for compressing program files and transmitting the compressed program files to wireless interface devices, as described in Boals and a flexible-retractable peripheral system for mobile unit as described in Dowling can be combined to arrive at the invention recited in claim 26, 31 and 32 namely, a system for **remote input/output** for a processing unit, wherein a mobile input/output terminal is integrated to and is part of one of a cell phone, a personal digital assistant, and a laptop. Dowling teaches expansion of **external peripherals** for non-area constrained user interface and relates to a non-analogous art of designing flexible-retractable peripherals.. Boals and Dowling, alone or in combination

does not suggest or provide any motivation for the limitation “a mobile input/output terminal for the primary processing unit, wherein said mobile input/output terminal enables a user to control the primary processing unit for all data processing and storage using said plurality of system resources;” recited in claim 26. For the reasons stated above, applicant respectfully submits that claims 26-48 are not obvious over the cited references, and applicant solicits reconsideration and allowance of the claims.

Second, the references do not teach, suggest or provide any motivation for the following limitations of claims 26, 31, 45, and 48:

“a mobile input/output terminal for the primary processing unit, wherein said mobile input/output terminal enables a user to control the primary processing unit for all data processing and storage using said plurality of system resources;” of claim 26.

“wherein the mobile input/output terminal comprises a microprocessor **specifically designed and configured** to exclusively drive input and output peripherals of the mobile input/output terminal and one of wireless connectivity and landline connectivity” of claim 45.

“wherein the mobile input/output terminal is **integrated to and is part of** one of a cell phone and a personal digital assistant” of claim 31;

“transmitting user generated raw input signals from a mobile input/output terminal to a primary processing unit over a communication network;” of claim 48;

“transmitting said audio-visual output signals from the primary processing unit to said mobile input/output terminal over said communication network;” of claim 48; and

“rendering audio-visual display at the mobile input/output terminal as screen flashes using said audio-visual output signals” of claim 48.

Also, common sense dictates that a person of ordinary skill in the art, at the time the invention was made, would not combine a system for compressing program files and transmitting the compressed program files to wireless interface devices of Boals and a flexible-retractable peripheral system for mobile unit of Dowling to arrive at the claimed invention because Boals and Dowling show no recognition or appreciation of the limitation "mobile input/output terminal enables a user to control the primary processing unit for all data processing and storage using said plurality of system resources" as recited in claim 26 and the limitation "wherein the mobile input/output terminal comprises a microprocessor **specifically designed and configured** to exclusively drive input and output peripherals of the mobile input/output terminal and one of wireless connectivity and landline connectivity" as recited in claim 45; or, the problem sought to be solved by the applicant, namely, "a mobile input/output terminal **internally configured** to remotely and virtually access and control a primary processing unit". Therefore one skilled in the art would not likely use Dowling, alone or in combination with another reference, to attempt to solve the problem.

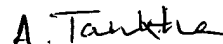
For the reasons stated above, applicant respectfully submits that claims 26-48 are not obvious over the cited references, and applicant solicits reconsideration and allowance of the claims.

Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If, in the opinion of Examiner Barqadle, a telephone conference would expedite the prosecution of this application, Examiner Barqadle is requested to call the undersigned.

Respectfully submitted,

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